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Shpunt et al.

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(54) **STANDALONE DEPTH CAMERA**

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(57) **ABSTRACT**

Scanning apparatus includes a base and a gimbal, including a shaft that fits into rotational bearings in the base and is configured to rotate through 360° about a gimbal axis relative to the base. A mirror assembly, fixed to the gimbal, includes a mirror, which is positioned on the gimbal axis and is configured to rotate about a mirror axis perpendicular to the gimbal axis. A transmitter directs pulses of optical radiation toward the mirror, which directs the optical radiation toward a scene. A receiver, receives, via the mirror, the optical radiation reflected from the scene and outputs signals in response to the received radiation. Control circuitry drives the gimbal to rotate about the gimbal axis and the mirror to rotate about the mirror axis, and processes the signals output by the receiver in order to generate a three-dimensional map of the scanned area.

14 Claims, 4 Drawing Sheets